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Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application. Claims 2, 13, 15, 16, 19, 22, 23, 29, 31-36, 38, 40, and 42 are canceled without prejudice or disclaimer.

Listing of Claims:

1. (Currently amended) A production method for producing Group-III-element nitride single crystals comprising:

heating a reaction vessel containing at least one metal element selected from the group consisting of an alkali metal and an alkaline-earth metal and at least one Group III element selected from the group consisting of gallium (Ga), aluminum (Al), and indium (In) to prepare a flux of the metal element; and

feeding nitrogen-containing gas into the reaction vessel and thereby allowing the at least one Group III element and nitrogen to react with each other in the flux to grow Group-III-element nitride single crystals,

wherein the Group-III-element nitride single crystals are grown, with while the flux of the metal element and the at least one Group III element having been are stirred to be mixed together by rocking the reaction vessel.

2. Canceled

3. (Currently amended) The production method according to claim [[2]] 1, wherein the reaction vessel is rotated or the flux of the metal element and the at least one Group III element are stirred to be mixed together using a stirring blade formed of at least one material selected from the group consisting of Y₂O₃, CaO, MgO, and W, in addition to being rocked.

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4. (Currently amended) The production method according to claim [[2]] 1, wherein a substrate is placed in the reaction vessel, a thin film of Group-III-element nitride is formed on a surface of the substrate beforehand, and Group-III-element nitride single crystals are grown on the thin film.

5. (Original) The production method according to claim 4, wherein the single crystals are grown with a liquid mixture of the flux containing the at least one Group III element and the at least one Group III element flowing continuously or intermittently in a thin layer state on a surface of the thin film formed on the substrate.

6. (Original) The production method according to claim 4, wherein before the Group-III-element nitride single crystals start growing, the reaction vessel is tilted in one direction, so that a liquid mixture of the flux and the at least one Group III element is pooled on a bottom of the reaction vessel on a side to which the reaction vessel is tilted and thereby the liquid mixture is prevented from coming into contact with a surface of the thin film of the substrate.

7. (Original) The production method according to claim 4, wherein after the Group-III-element nitride single crystals finish growing, the reaction vessel is tilted in one direction, so that a liquid mixture of the flux and the at least one Group III element is removed from a surface of the thin film of the substrate and is pooled on a side to which the reaction vessel is tilted.

8. (Currently amended) The production method according to claim [[2]] 1, wherein the flux and the at least one Group III element are stirred to be mixed together by heating a lower part of the reaction vessel to generate heat convection in addition to the rocking of the reaction vessel and the heating of the reaction vessel for preparing the flux.

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9. (Currently amended) The production method according to claim [[2]] 1, wherein the at least one Group III element is supplied to the flux while the Group-III-element nitride single crystals grow.

10. (Currently amended) The production method according to claim [[2]] 1, wherein the at least one Group III element is gallium (Ga), and the Group-III-element nitride single crystals are gallium (Ga) nitride single crystals.

11. (Currently amended) The production method according to claim [[2]] 1, wherein the alkali metal is at least one selected from the group consisting of lithium (Li), sodium (Na), potassium (K), rubidium (Rb), cesium (Cs), and francium (Fr) while the alkaline-earth metal is at least one selected from the group consisting of calcium (Ca), strontium (Sr), barium (Ba), and radium (Ra).

12. (Currently amended) The production method according to claim [[2]] 1, wherein the flux of the at least one metal element is a sodium flux, a mixed flux of sodium and calcium, or a mixed flux of sodium (Na) and lithium (Li).

13. Canceled

14. (Currently amended) The production method according to claim [[13]] 1, wherein the ratio of the calcium (Ca) to the sum of the sodium (Na) and the calcium (Ca), or the ratio of the lithium (Li) to the sum of the sodium (Na) and the lithium (Li) is in a range of 0.1 mol% to 99 mol%.

15-16. Canceled

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17. (Currently amended) The production method according to claim [[2]] 1, wherein the at least one Group III element and nitrogen react with each other under conditions including a temperature of 100°C to 1200°C and a pressure of 100 Pa to 20 MPa.

18. (Currently amended) The production method according to claim [[2]] 1, wherein the nitrogen(N)-containing gas is at least one of nitrogen (N₂) gas and ammonia (NH₃) gas.

19. Canceled

20. (Original) The production method according to claim 4, wherein the thin film formed on the substrate is single crystals of Group-III-element nitride or is amorphous Group-III-element nitride.

21. (Original) The production method according to claim 4, wherein the largest diameter of the thin film formed on the substrate is at least 2 cm.

22-23. Canceled

24. (Currently amended) The production method according to claim [[2]] 1, wherein impurities that are intended to be used for doping are allowed to be present in a liquid mixture of the flux and the at least one Group III element.

25. (Original) The production method according to claim 24, wherein the impurities are at least one selected from the group consisting of calcium (Ca), a compound containing calcium (Ca), silicon (Si), alumina (Al₂O₃), indium (In), aluminum (Al), indium nitride (InN), silicon nitride (Si₃N₄), silicon oxide (SiO₂), indium oxide (In₂O₃), zinc (Zn), magnesium (Mg), zinc oxide (ZnO), magnesium oxide (MgO), and germanium (Ge).

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26. (Currently amended) The production method according to claim [[2]] 1, wherein transparent single crystals are grown.
27. (Currently amended) The production method according to claim [[2]] 1, wherein the flux and the at least one Group III element are stirred to be mixed together, which is carried out in an atmosphere of inert gas other than nitrogen first and then in an atmosphere of the nitrogen-containing gas that is obtained by substituting the inert gas by the nitrogen-containing gas.
28. (Original) The production method according to claim 27, wherein the inert gas is substituted by the nitrogen-containing gas gradually.
29. Canceled
30. (Currently amended) The production method according to claim [[29]] 3, wherein the flux and the at least one Group III element are stirred to be mixed together using the stirring blade, which is carried out through a rotational motion or a reciprocating motion of the stirring blade or a combination thereof, or a rotational motion or a reciprocating motion of the reaction vessel with respect to the stirring blade or a combination thereof.
- 31-36. Canceled
37. (Withdrawn and currently amended) An apparatus that is used in a production method for producing Group-III-element nitride single crystals according to claim [[2]] 1, comprising:
a means for heating a reaction vessel for preparing a flux by heating at least one metal element selected from the group consisting of an alkali metal and an alkaline-earth metal contained in the reaction vessel;

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a means for feeding nitrogen-containing gas to be used for reacting a Group III element contained in the flux and nitrogen to each other by feeding the nitrogen-containing gas into the reaction vessel; and

a means for rocking the reaction vessel in a certain direction, wherein the means tilts the reaction vessel in one direction and then tilts it in an opposite direction to the one direction.

38. Canceled

39. (Withdrawn and currently amended) A reaction vessel that is used in a production method for producing Group-III-element nitride single crystals according to claim [[2]] 1,
wherein the reaction vessel has a cylindrical shape and includes two projections that protrude from an inner wall thereof toward the circular center, and a substrate placed between the two projections.

40. Canceled

41. (Withdrawn and currently amended) A reaction vessel that is used in a production method for producing Group-III-element nitride single crystals according to claim [[2]] 1,
wherein the reaction vessel is formed of or coated with at least one material selected from the group consisting of AlN, SiC, and a carbon-based material.

42. Canceled